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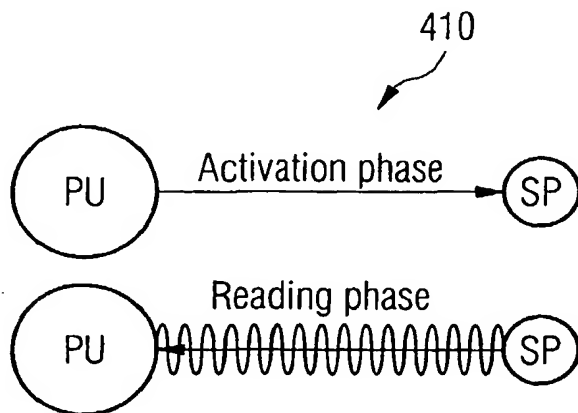
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(54) Title: WIRELESS COMMUNICATION NETWORK ARCHITECTURE



(57) Abstract: A heterogeneous wireless network topology is suited for low power, short-range and ubiquitous ad-hoc communication, said network topology being capable of integrating different wireless transmission technologies, in particular to a wireless sensor network (WSN) including different node types (PUs, SAs and/or SPs) and communication technologies. The network is highly heterogeneous and can be operated according to the master-slave principle or in a distributed ad-hoc manner. The nodes (PUs, SAs and/or SPs) can have different wireless communication means tailored to their individual role in the network and other constraints, thus allowing different communication patterns. A remote polling and control system (430, 450, 460, or 470) in a heterogeneous wireless sensor network (WSN) comprises a master node (PU) having an RF transceiver (aTx and aRx) for sending (SOa) a wake-up signal to at least one remote slave

node (SP, SA) of a first and/or second type for polling (Sob) information detected by said slave node (SP) or triggering functions to be executed, sending (SOc) control information for triggering a function to be executed by at least one remotely controllable slave node (SA) of a second type and receiving (Sod) feedback information from the remotely controllable slave node (SA) of said second type, said slave nodes (SAs, SPs) being in a stand-by mode before and after being called by the master node (PU).

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